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**AMENDMENTS TO THE DRAWINGS**

Please amend Fig. 1, blocks 16 and 17 to correct the spelling of ~~DAMPER~~, as indicated in the attached REPLACEMENT SHEET.

## REMARKS

Reconsideration of the application is respectfully requested for the following reasons:

1. Objections to Drawings

The objection to Fig. 1 has been addressed by correcting the spelling of –damper– in blocks 16 and 17.

The objection to Fig. 2 is respectfully traversed on the grounds that the Examiner has apparently mistaken  $Y_{th1}$  as a “roll threshold.” According to the paragraph bridging pages 2 and 3 of the Official Action, Fig. 2 “*appears to only provide yaw control if there is a **roll** threshold rate met or exceeded.*” However,  $Y_{th1}$  is actually a **yaw** threshold and not a **roll** threshold, as explained in the paragraph bridging pages 6 and 7 of the original specification (which is why the letter **Y** is used—the roll threshold is  $R_{th1}$ , as explained for example, in line 3 on page 7).

Fig. 2 shows that after the anti-roll step 22, a yaw threshold is checked (step 24), and anti-yaw control (step 26) is performed if the yaw threshold is exceeded. It is not understood why the Examiner believes that yaw control depends on the **roll** threshold when step 24 clearly shows application of the **yaw** threshold  $Y_{th1}$ .

Since the objection to Fig. 2 appears to be based on an error in reading step 24, withdrawal of the objection is respectfully requested.

2. Objection to Specification

This objection has been addressed by changing “part 18” to –part 17 in line 7 on page 7 and line 11 on page 8, as suggested by the Examiner.

3. Objection to Claims

This objection has been addressed by amending claim 1 to delete “or not.”

4. Rejection of Claims 2 and 3 Under 35 USC §112, 2<sup>nd</sup> Paragraph

This rejection has been addressed by amending claim 1 to positively recite the front and rear wheel dampers, thereby providing antecedence for their subsequent recitations in claims 2 and 3.

5. Rejection of Claims 1-3 Under 35 USC §102(b) in view of Japanese Patent Publication JP09-109641 (JP ‘641)

This rejection is respectfully traversed on the grounds that JP ‘641 fails to disclose or suggest a method for providing anti-roll and anti-yaw control in which:

- an anti-roll control is executed based on a **roll rate threshold** (instead, JP ‘641 takes into account both roll rate *and* roll angle);
- an anti-yaw control is executed based on a **yaw rate threshold** (instead, JP ‘641 carries out anti-yaw control based on the roll rate and angle rather than on yaw rate—see the last sentence of the English abstract);
- the yaw rate threshold is not just compared with the yaw rate, but with a “**difference** between an **actual** yaw rate and a **desired** yaw rate” (JP ‘641 does not consider actual and desired yaw rates);
- the claimed anti-yaw control is executed first and the anti-yaw control is carried out thereafter (JP ‘641 permits yaw and roll controls to be carried out simultaneously, whether the roll rate and angle thresholds are exceeded).

The roll control unit of JP ‘641 performs a roll control when the detected signal from a **roll speed** detecting means is not less than the specified value **and** when the detected signal from a **roll angle** detecting means is not more than a specified value. This not the same as comparing just the roll rate with a roll rate threshold. In JP’641, the roll speed could exceed the threshold, but the roll angle might not have reached the threshold, in which case the system would wait until the roll angle is exceeded. This is a different result than the present invention, which executes roll control as soon as the roll rate is exceeded, irrespective of the angle. Thus, the present invention provides a quicker roll response than the method of JP ‘641.

On the other hand, the yaw control unit of JP '641 performs a yaw control **whenever** the **roll** speed and **roll** angle respectively exceed the specified values, whereas the claimed invention makes a separate **yaw** rate determination, *after* the roll rate determination has been made. Furthermore, the claimed yaw control is not implemented based on the yaw rate alone, but on the **difference** between the actual yaw rate and a desired yaw rate. As a result, yaw corrections are only made when absolutely necessary. While this might result in slower yaw corrections than the method of JP '641, a delay in yaw correction since the roll motion of a vehicle generally occurs before yaw motion. The JP '641 publication does not even remotely suggest that yaw control should be based on yaw rate, much less on a thresholded difference between actual and desired yaw rate.

Separate roll and yaw controls, as claimed, are better able to take into account the different conditions that may cause yaw, including road surface conditions, the type of vehicle, and the degree of steering. Roll is a function of g-forces, such that a vehicle going around a curve on dry pavement will normally exhibit roll but not yaw, unless the speed is excessive. However, in slippery conditions, the same speed and degree of steering might generate a significant amount of yaw. The method of JP '641 cannot adequately take these conditions into account.

Because the method disclosed in the JP '641 publication differs from that of the claimed invention in a number of respects, including the manner in which roll correction is applied (based on roll rate and angle *versus* based on roll rate), the manner in which yaw correction is applied (based on roll rate and angle *versus* based on actual and desired yaw rate), and on the timing of yaw correction, it is respectfully submitted that the JP '641 publication does not anticipate the claimed invention, and withdrawal of the rejection of claims 1-3 under 35 USC §102(b) is respectfully requested.

6. Rejection of Claims 1-3 Under 35 USC §103(a) in view of U.S. Patent Nos. 6,505,108 (Bodie) and 6,053,583 (Izumi)

This rejection is respectfully traversed on the grounds that the Bodie and Izumi patents fails to disclose or suggest, whether considered individually or in combination, a method for providing anti-roll and anti-yaw control in which:

- an anti-roll control is executed based on a **roll rate threshold** (the Bodie patent only concerns **yaw** rate, and does not disclose any sort of roll rate threshold or calculation, while the Izumi patent not only is limited to yaw or skid control, but teaches *braking* rather than *damper*-based yaw control);
- the yaw rate threshold is not just compared with the yaw rate, but with a “**difference** between an **actual** yaw rate and a **desired** yaw rate” (Bodie and Izumi do not take into account a desired yaw rate, or perform a difference calculation based actual and desired rates, for subsequent comparison with a threshold);
- the claimed anti-yaw control is executed first and the anti-roll control is carried out thereafter (since neither Bodie nor Izumi even mentions a roll threshold determination, neither patent could have suggested the claimed yaw determination *after* the roll determination—to the contrary, the yaw controls of both Bodie and Izumi are activated immediately irrespective of any roll control).

According to the Examiner, Bodie discloses “an anti-roll and an anti-yaw control suspension. However, Bodie only mentions roll control in the context of load transfer (see col. 1, lines 66) and does not disclose any sort of thresholding or active roll control.

Also according to the Examiner, since Bodie does not mention the difference between desired and actual yaw rate, or comparison with threshold roll and yaw rates, “*Examiner is relying on Izumi et al.*” However, Izumi also does not disclose calculating a difference between desired and actual yaw rates for comparison with a threshold, or mention any sort of roll control, and therefore the Izumi patent could not possibly have suggested modification of the method of

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Bodie to include the claimed roll and yaw calculations, or the claimed roll and yaw control timing.

Since *neither* the Bodie nor the Izumi patents discloses or suggests any sort of roll control, actual and *desired* yaw difference determination, or timing between yaw and roll controls, it is respectfully submitted that the combination of Bodie and Izumi fail to present a *prima facie* case of obviousness, and withdrawal of the rejection of claims 1-3 in view of the Bodie and Izumi patents is respectfully requested.

Having thus overcome each of the rejections made in the Official Action, withdrawal of the rejections and expedited passage of the application to issue is requested.

Respectfully submitted,

BACON & THOMAS, PLLC

A handwritten signature in black ink, appearing to read 'B. Urcia', with a long horizontal flourish extending to the right.

By: BENJAMIN E. URCIA  
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